User Guide to Standard Plans
Section RS – ROADSIDE SIGNS
Appendix A: Post Type Selection

Introduction

Standard Plans for roadside sign structures include 6 post type designations. Solid-sawn wood posts are used for single post roadside signs and smaller two post roadside signs. Laminated wood box posts are used for larger two post roadside signs.

- Solid-sawn wood posts (note that the sizes shown are nominal sizes)
  - 4x4
  - 4x6
  - 6x6
  - 6x8
- Laminated wood box posts
  - Type M
  - Type L

The sign designer uses this Appendix to determine the post type and shows the post type on the project plans.

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Single Post (Solid-Sawn Wood Post)

Procedure:

- Determine the basic dimensions (see Figure 1)
  - Sign Panel Depth, *D*, in inches
  - Sign Panel Length, L, in feet
  - Sign Panel Area in square feet
  - Height *H* from groundline to center of sign panel in feet
- Verify the basic dimensions meet the following limitations.
  - For Freeway and Expressway Locations, clearances meet the requirements on Standard Plan RS1
  - Sign Panel Area must not be more than 30 square feet
  - *H* must not be more than 12 feet
- Verify the design conforms to additional limitations
  - Details conform to the Standard Plans for single post version of wood post roadside signs
  - Must not include CMS or EMS or other electronic sign panels.
  - Center of sign panel must be no more than 33’ above the surrounding terrain.
  - Use the chart in Figure 2 to choose the post size. If in the cross-hatched portion of the chart or outside the bounds of the chart, then single solid sawn wood post cannot be used.

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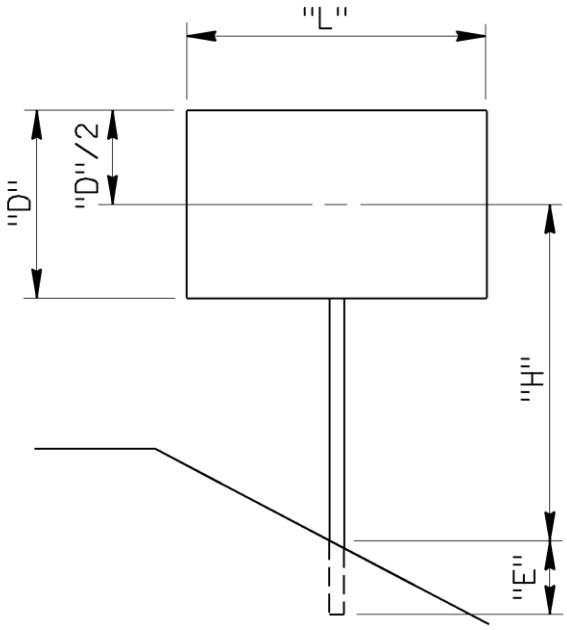
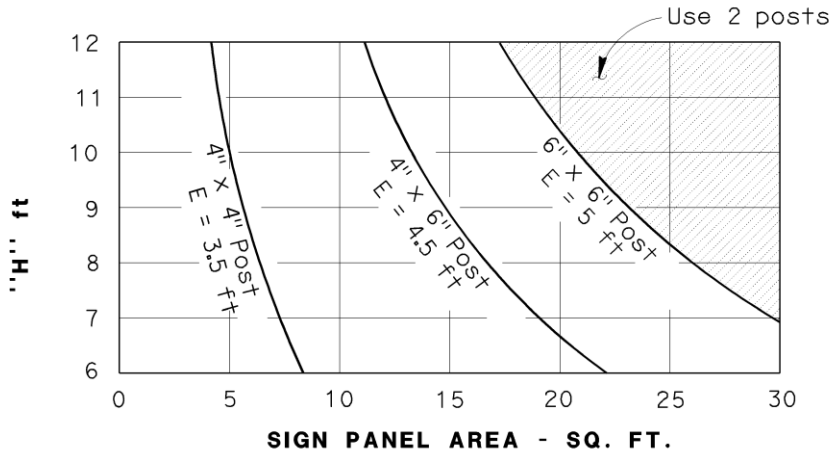


SINGLE POST

Figure 1: Explanation of Dimensions



SINGLE POST CHART

Figure 2: Post Sizing Chart

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Two Post (Solid-Sawn Wood Post)

Procedure:

- Determine the basic dimensions (see Figure 3 or Figure 4 as appropriate)
  - Sign Panel Depth, *D*, in inches (or D_1 and D_2)
  - Sign Panel Length, L, in feet
  - Sign Panel Area in square feet
  - Height *H* from ground line (lowest of the two posts) to center of sign panel in feet.
- Verify the basic dimensions meet the following limitations.
  - For Freeway and Expressway Locations, clearances meet the requirements on Standard Plan RS1
  - Sign Panel Area must not be more than 90 square feet
  - *H* must not be more than 16 feet
- Verify the design conforms to additional limitations
  - Details conform to the Standard Plans for two post version of wood post roadside signs
  - Must not include CMS or EMS or other electronic sign panels.
  - Center of sign panel must be no more than 33’ above the surrounding terrain.
- Use the chart in Figure 5 to choose the post size. If in the cross-hatched portion of the chart or outside the bounds of the chart, then solid sawn wood post not be used.
- Do not mix post sizes in one sign.

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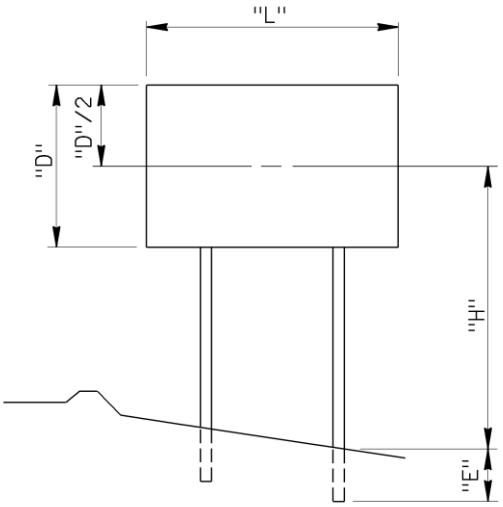
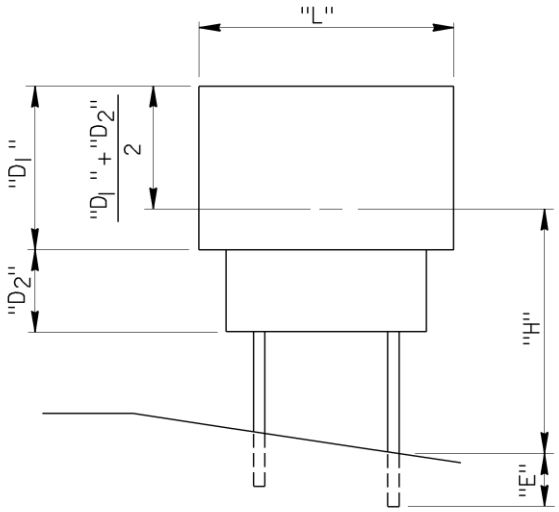


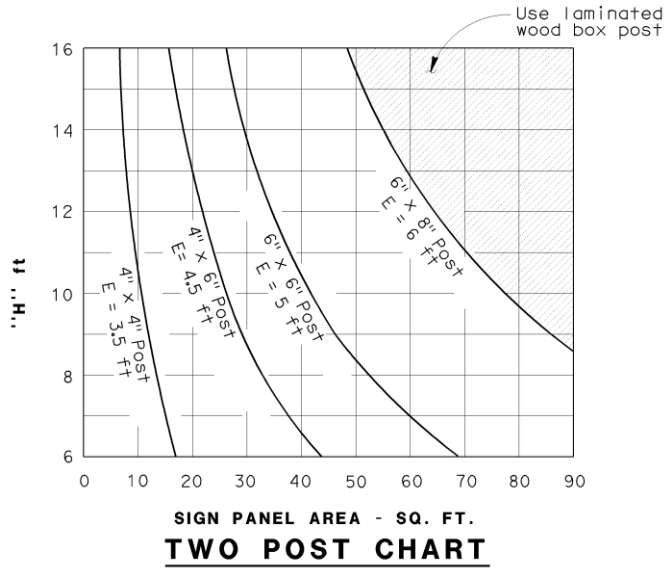
TWO POST

Figure 3: Explanation of Dimensions



TWO POST

Figure 4: Explanation of Dimensions with Two Sign Panels



TWO POST CHART

Figure 5: Post Sizing Chart

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Two Post (Laminated Wood Box Posts)

Procedure:

- Determine the basic dimensions (see Figure 6)
  - Sign Panel Depth, *D*, in inches
  - Sign Panel Length, L, in feet
  - Heights, h_L and h_R, from ground line to center of sign panel
- Verify the basic dimensions meet the following limitations.
  - For Freeway and Expressway Locations, clearances meet the requirements on Standard Plan RS1
  - D must be between 24" and 120" (inclusive) and must be in an increment of 6"
  - L must be between 8' and 24' (inclusive) and must be in an increment of 1'
  - h_L must not exceed 26'
  - h_R must not exceed 26'
- Verify the design conforms to additional limitations
  - Details conform to the Standard Plans for two post version of laminated wood box post signs
  - Do not use for single post signs.
  - Must not include CMS or EMS or other electronic sign panels.
  - Center of sign panel must be no more than 33' above the surrounding terrain.
- Use Table M along with the longer of h_L and h_R in to check if post type M is acceptable. If not use Table L along with the longer of h_L and h_R to check if post type L is acceptable. If not, then cannot use Laminated Wood Box Post.
- Do not mix post types L and M in one sign.
- Find lengths of posts needed.
  - Find embedment required
    - For Post Type M minimum embedment, E_L and E_R are both 6'
    - For Post Type L use Table E to find minimum embedments, E_L and E_R
  - Find minimum lengths

$$L_{minL} = E_L + h_L \frac{D}{2 \times 12}$$

$$L_{minR} = E_R + h_R \frac{D}{2 \times 12}$$

- Round up to next standard length in Table S. Posts will be cut to final length in the field.

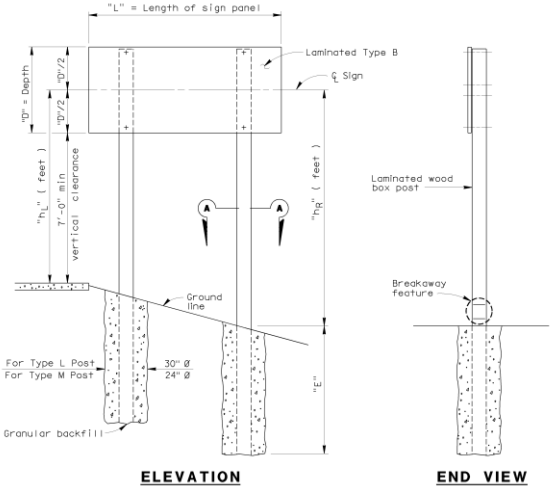

Figure 6. Explanation of Dimensions

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TABLE M

MAXIMUM ALLOWABLE ''h'' FOR TYPE M POST

SIGN DEPTH "D" INCHES	SIGN LENGTH "L" (feet)																
	8′	9′	10′	11′	12′	13′	14′	15′	16′	17′	18′	19′	20′	21′	22′	23′	24′
24																	
30																	26
36													26	24	23	22	21
42										26	24	23	22	21	20	19	18
48								26	24	23	21	20	19	18	17	17	16
54						26	24	23	21	20	19	18	17	16	15	15	14
60					26	24	22	20	19	18	17	16	15	14	14	13	13
66				26	23	22	20	19	17	16	15	15	14	13	13	12	11
72			26	23	21	20	18	17	16	15	14	13	13	12	11	11	10
78		26	24	22	20	18	17	16	15	14	13	12	12	11	11	10	10
84		24	22	20	18	17	16	14	14	13	12	11	11	10	10	9	9
90	26	23	20	19	17	16	14	13	13	12	11	11	10	9	9	9	8
96	24	21	19	17	16	15	14	13	12	11	10	10	9	9	8	8	8
102	23	20	18	16	15	14	13	12	11	10	10	9	9	8	8	8	7
108	21	19	17	15	14	13	12	11	10	10	9	9	8	8	7	7	7
114	20	18	16	15	13	12	11	11	10	9	9	8	8	7	7	7	6
120	19	17	15	14	13	12	11	10	9	9	8	8	7	7	7	6	6

Maximum "h" is 26′

Vertical clearance is less than 7′-0"

NOTE: Use Type L Posts when value "h" exceeds Table M

TABLE L

MAXIMUM ALLOWABLE ''h'' FOR TYPE L POST

SIGN DEPTH "D" INCHES	SIGN LENGTH "L" (feet)							
	17′	18′	19′	20′	21′	22′	23′	24′
72								
78								
84								26
90					26	26	26	25
96					26	25	24	23
102				26	25	24	23	22
108			26	25	24	22	21	21
114		26	25	23	22	21	20	19
120	26	25	23	22	21	20	19	18

Maximum "h" is 26′

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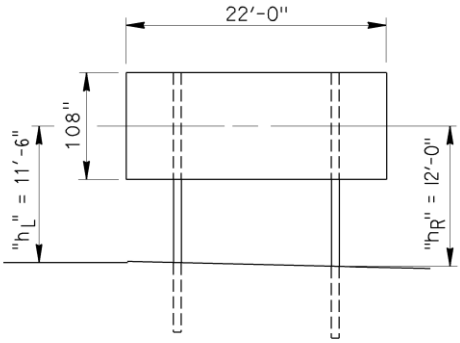
Table E

POST EMBEDMENT "E" FOR TYPE L POST					
"h" feet	TOTAL SIGN AREA (ft²)				
	40 to 90	90 to 140	140 to 190	190 to 240	240 to 290
9 to 13	6′	6.5′	7.5′	8.5′	9′
13 to 17	6′	7.5′	8′	9′	10′
17 to 21	6′	7.5′	9′	9′	
21 to 26	7′	8′	9′		

(Post embedment for Type M is 6′)

Table S: Standard Supplied Lengths for Laminated Wood Box Posts	
Post Type M	Post Type L
20′	24′
24′	28′
28′	32′
32′	40′



Given:
L = 22′-0"
D = 108"
h = 12′-0"

Enter Table M first:
Maximum allowable "h" is 7′-0"
which is less than 12′-0"

Go to Table L:
Maximum allowable is 22′-0"
12′-0" is ok, use Type L post

EXAMPLE OF HOW TO SELECT POST TYPE